

### REMARKS

Claims 1-18 were pending at the time of the Action. Claims 1-3, 5-8 and 11-17 were rejected in the Action under 35 U.S.C. Section 103 as being unpatentable over U.S. Patent No. 6,369,762 to Yanagisawa et al. ("Yanagisawa") in view of U.S. Patent No. 6,771,223 to Shoji et al. ("Shoji"). Claims 9-10 were rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Shoji in further view of U.S. Patent No. 6,600,456 to Gothard et al. ("Gothard"). Claim 4 was rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Shoji in further view of U.S. Patent No. 6,211,830 to Monma et al. ("Monma"). Claims 17 and 18 were rejected in the Action under Section 103 as being unpatentable over Yanagisawa and Shoji in further view of and U.S. Patent Publication No. 2004/0174302 to Robin ("Robin").

Receipt of a certified copy of EP 03075785.9 is acknowledged on page 2 of the Action, which states that the form submitted by the Applicant is not for claims to foreign priority but for applications preceding priority. As noted in "Related Applications" section, which was added in the Preliminary Amendment filed September 16, 2005, Applicant wishes to confirm that the present application is a 35 U.S.C. §371 national phase application of PCT International Application No. PCT/EP2004/001503, having an international filing date of February 18, 2004 and claiming priority to European Patent Application No. 03075785.0, filed March 18, 2003 and United States Provisional Application No. 60/458,170 filed March 27, 2003. No further Actions are believed to be necessary in this regard.

Minor amendments have been made to the claims to replace the term "said" with the term "the." Applicant submits that these amendments do not affect the scope of the claims. In addition, Claims 19-21 have been added to provide a more complete claim set.

Reconsideration is respectfully requested for the reasons set forth below.

**I. Independent Claims 1 and 18 are patentable over Yanagisawa and Shoji**

Claim 1 recites a diversity radio antenna, including:

a ground substrate, first and second elongated antenna elements, each extending between respective first and second opposing ends thereof in a plane parallel to and spaced from the ground substrate, and an excitation electrode interposed between said respective first ends, each antenna element having one grounding point connectable to the ground substrate, wherein the first antenna element has a first ground connector switch means selectively connecting or disconnecting the first antenna grounding point to the ground substrate, and the second antenna element has a second ground connector switch means selectively connecting or disconnecting the second antenna grounding point to the ground substrate, wherein the ground connector switch means are configured to selectively connect one or both of the antenna elements to the ground substrate for controlling radiation beam pattern and polarisation diversity of the antenna.

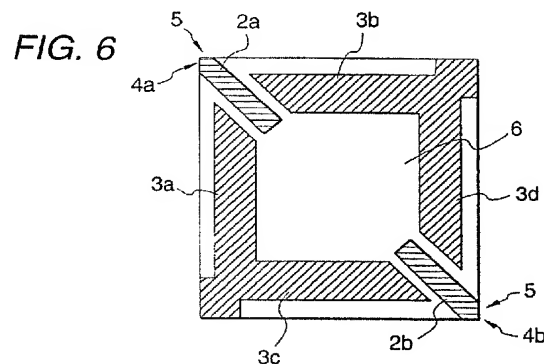
Claim 18 recites a radio communication terminal including a diversity radio antenna including substantially the recitations of Claim 1.

The Action concedes that Yanagisawa fails to teach that the first antenna element has a first ground connector switch means selectively connecting or disconnecting the first antenna grounding point to the ground substrate and the second antenna element has a second ground connector switch means selectively connecting or disconnecting the second antenna grounding point to the ground substrate. The Action cites Shoji as teaching this feature. *See* the Action, page 4.

Applicant respectfully disagrees. For the reasons discussed below, neither Shoji nor Yanagisawa teach or suggest two antenna elements such that each antenna element includes a ground connector switch means for selectively connecting or disconnecting a grounding point for controlling radiation beam pattern and polarization diversity of the antenna as recited in Claims 1 and 18.

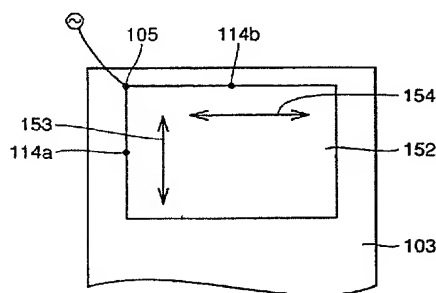
Yanagisawa illustrates elongated antenna elements in Figures 1A, 3a and 3b (cited in the Action, page 3). In addition, Yanagisawa proposes a first set of radiation electrodes 3a and 3b and a second set of radiation electrodes 3c and 3d such that one set can be used for right-handed circularly-polarized waves and another set can be used for left-handed

circularly-polarized waves in Figure 6. In particular, Yanagisawa states that "by switching between feeding sections 4a and 4b through the use of a circuit switcher, the antenna can transmit and receive both the right-handed circularly-polarized wave and the left-handed circularly-polarized wave." See Figure 6 (reproduced below) and col. 8, lines 35-49.



In contrast, Shoji discusses switching between planes of polarization by switching between two grounding points 114a, 114b on a single patch antenna 152. See Shoji, Figure 16 (reproduced below) and col. 1, lines 44-58 (cited in the Action).

**FIG. 16** PRIOR ART



Therefore, Yanagisawa and Shoji do not teach or suggest that "the ground connector switch means are configured to selectively connect one or both of the antenna elements to the ground substrate for controlling radiation beam pattern and polarization diversity of the antenna" as recited in Claims 1 and 18. Shoji states that switching between planes of polarization can be realized "by switching between ground points 114a and 114b" (which are on a single patch antenna 152) rather than by connecting one or both antenna elements to a ground substrate as recited in Claim 1. Yanagisawa merely discusses switching between

feeding sections 4a and 4b through the use of a circuit switcher to transmit and receive right-handed and left-handed circularly-polarized waves. *See* col. 8, lines 35-49.

Moreover, it is noted that Shoji states that the described patch antenna has a large antenna size and is difficult to be applied to portable equipment such as portable telephones, which generally require reductions in size and weight. *See* col. 1, lines 64-67. Therefore, Shoji teaches away from a combination with the antenna of Yanagisawa, which is directed to a very compact antenna for circularly-polarized waves that can be mounted on a compact portable terminal. *See* Yanagisawa, col. 2, lines 31-36.

It is noted that Gothard, Monma and Robin (pages 5-7 of the Action) do not cure the deficiencies of Yanagisawa and Shoji.

For at least these reasons, neither Shoji nor Yanagisawa teach or suggest all of the recitations of Claims 1 and 18, and cannot render the recitations of Claims 1 and 18 obvious. Claims 2-17 and Claims 19-21 depend Claim 1 and are patentable for at least the reasons discussed above. In addition, at least certain dependent claims are separately patentable for at least the reasons discussed below.

## **II. Claims 8 and 21 are Separately Patentable**

Claim 8 recites that the ground connector switch means are configured to selectively connect the first and second antenna elements to ground for adapting the antenna to a circularly-polarized radio wave, or disconnect one of the first and second antenna elements from ground for adapting the antenna to a linearly-polarized radio wave. Claim 21 recites that the ground connector switch means are configured to select vertical, horizontal or circular polarization of the antenna.

As noted above, Shoji discusses switching between planes of polarization by switching between the grounding points 114a, 114b on a single patch antenna 152. *See* Shoji, col. 1, lines 44-58. Yanagisawa proposes that the antenna can transmit and receive both the right-handed and left-handed circularly-polarized waves. *See* Yanagisawa, col. 8, lines 35-49. Therefore, neither Shoji nor Yanagisawa teaches or suggests a ground connector switch means configured to selectively connect/disconnect elements to ground to adapt the antenna

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to a circularly-polarized and/or linearly-polarized radio wave as recited in Claim 8 or to select vertical, horizontal or circular polarization of the antenna as recited in Claim 21.

For at least these reasons, Claims 8 and 21 are separately patentable and Applicant respectfully requests an indication of same.

### CONCLUSION

Accordingly, Applicant submits that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,



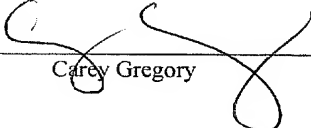
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### CERTIFICATION OF TRANSMISSION

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Carey Gregory